NOTE VI.

ON A COLLECTION OF JAVANESE MANTIDÆ AND PHASMIDÆ (ORTHOPTERA).

BY

JAMES A. G. REHN,

OF

THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, PENNA., U. S. A.

The collection on which the present report is based was submitted to me for study by Mr. Edward Jacobson of The Hague, Holland. To prevent needless repetition the collector's name has been omitted from the tabulations of the specimens, it being understood that all of the material was secured by Mr. Jacobson, while from the same reason only the exactly localities are given, all being on the island of Java.

The first set of the material remains in the collection of the Academy of Natural Sciences of Philadelphia, the remainder being returned to Mr. Jacobson, whom we wish to thank for the opportunity to study the collection.

Family Mantidae.

Subfamily Amorphoscelinae.

Amorphoscelis pellucida Westwood.

Samarang. October, 1910. One male.

Westwood's description [1]) is very brief and by no means

1) Rev. Ins. Fam. Mant., p. 28.

as explicit as could be desired. While the present specimen shows no characters at variance with his description, comparison with several African species of the genus clearly demonstrates that only comparative value should be given to certain characters briefly mentioned by him, viz-the median tubercles of the occiput and the oval form and deplanate character of the pronotum. The median occipital tubercles are only slightly more raised "bosses" than similar structures in the other species, while the "oval" form of the pronotum is merely a sweeping characterization of the general form of the same. The proportions and color pattern of our specimen are exactly as described.

This species is now known from Adelaide, Australia, Ceylon, Singapore and the present locality.

Subfamily Orthoderinae.

Theopompa servillei (Haan).

Nongkodjadjar. January, 1911. One adult female, one immature male.

This species was described from Lewibonger, Java and is also known from Malacca and Lower Siam.

Subfamily Mantinae.

Iridopteryx reticulata (Haan).

Batavia. December, 1908. One male.

Samarang. February, June, July, August and October, 1909 & 1910. Five males, two females.

Srondol, Samarang. August, 1909. One male.

The above series shows some little variation in size, while the medio-longitudinal blackish-brown line on the pronotum is variable in intensity, although evident in all of the individuals.

Originally described from Krawang, Java, this species has also been recorded from Tenasserim, Cambodia, Sumatra, Bah Soemboe, Sumatra and Java (without definite locality).

Gonypeta punctata (Haan).

Batavia. December, 1908. One male.

Srondol, Samarang. August, 1909. One male.

These specimens show there is some variation in the point at which the ramus of the humeral vein of the tegmina diverges, also in the general coloration. The Srondol specimen is perfectly typical in color when compared with Haan's figure, while the Batavia individual is much darker, being generally suffused with drab and having the dark markings on the limbs decidedly indicated. The latter specimen is also slightly smaller than the Srondol individual.

The species was described from Java, and is only known from that island and Sumatra. Saussure has recorded it from Ceylon, but as already shown by the author [1]) the insect from that island is doubtless different. The present material clearly belongs to Haan's species.

Tropidomantis tenera (Stål).

Samarang. June, 1909 & 1910. Two males.

This species has been recorded from Singapore, Banka, Java and Sarawak, Borneo.

Statilia nemoralis (Saussure).

Samarang. April, 1909. One female.

This specimen is smaller than the original measurements in all of its proportions except tegminal length. However, another female individual from Gunung Sugi, Sumatra [2]), in the collection of the Academy of Natural Sciences of Philadelphia, which represents the same species, fully agrees with Saussure's measurements in every respect, while neither show any structural or color characters which would separate them from *nemoralis*.

1) Bull. Amer. Mus. Nat. Hist., XXVI, p. 180.

2) This specimen was recorded by the author (Proc. Acad. Nat. Sci. Phila., 1903, p. 704) as *Statilia maculata*.

This form was previously known from the Philippines and the "East Indies".

Statilia maculata (Thunberg & Lundahl).

Samarang. March, April, June, September & December, 1909 & 1910. Four males, one female.

This species bas been recorded from Java by several authors.

Tenodera superstitiosa (Fabricius).

Samarang. July, August & September, 1909. Two males, one female.

Paratenodera aridifolia (Stoll).

Samarang. August, 1909. Three males.

Hierodula coarctata (Saussure).

Nongkodjadjar. January, 1911. One female.

This specimen fully agrees with the description of the species, which was first recorded from Bengal, but differs in having the cream-white tegminal stigma subovate instead of trigonal. The measurements are as follows:

Length of body,	57.	mm.
Length of pronotum,	16.8	„
Greatest width of pronotum,	8.	„
Length of tegmen,	39.5	„
Greatest width of tegmen,	12.	„
Length of cephalic femur,	15.2	„

The specimen figured by Westwood [1]) as this species is apparently different, as the cephalic coxae are strongly dentato-lobate in *coarctata*, instead of minutely spined as there shown.

Hierodula hybrida (Burmeister)?

Srondol, Samarang. August, 1909. One immature male.

1) Rev. Ins. Fam. Mant., pl. IV, fig. 1.

This specimen, although but half grown, when compared with an adult male of this species from Batavia, Java, determined by Saussure, shows no characters of difference except those of immaturity.

Rhombodera basalis (Haan).

Nongkodjadjar. January, 1911. One male, two adult females, one immature female.

All of these except one adult female are preserved in alcohol and have lost their original coloration.

This species was described from Krawang, Java.

Mr. Jacobson in writing about this species says: "These Mantidae have a kind of pouch or membrane of a claret-color between the segments of the under side of the abdomen. If attacked or frightened (by lizards, other animals or men) the Mantis takes a semi-erect position, so that the underside of the abdomen is visible from the front and the highly-colored membrane is protruded and made clearly visible".

Rhombodera flava (Haan).

Samarang. July, September & October, 1909. Three males.

Haan's name appears to be the first clearly applicable to this peculiarly Javanese species. Kirby considers Serville's *extensicollis* the first name for the form, but that was based on a species with an oval expansion to the pronotum, probably the same as *laticollis* Burm. Haan's description is very brief, but it contains nothing at variance with the present material. Giebel's *macropsis* has been properly synonymized as it was clearly based on material of the present species.

Mantis religiosa Linnæus.

Samarang. August & October, 1909. Two males.

These specimens fully agree in size with a male from Sheikh Husein, Gallaland, Africa, and are appreciably larger than the majority of seven males from Switzerland

and France. In structure and color the Javanese specimens are identical with the European and African material. One of the present individuals has the black proximal spot on the internal face of the cephalic coxæ solid, while the other has the same ocellate with yellow (*M. sancta* type).

Nanomantis albella (Burmeister).

Samarang. November, 1909. One male.

This species has been recorded from localities extending from Sumatra to the Philippines, having been originally described from Java.

Subfamily Creobotrinae.

Acromantis oligoneura (Haan).

Batavia. June, 1908 & September, 1909. One male, one female.

Samarang. August, 1909. One male.

This species is widely distributed in the Sundan region.

Theopropus elegans (Westwood).

Gunung Ungaran. December, 1909. One immature female.

Although not adult this specimen is sufficiently developed to be specifically identifiable.

The records of the species are from Tenasserim, Java and Borneo.

Family Phasmidae.

Subfamily Phyllinae.

Phyllium geryon Gray.

Nongkodjadjar. January, 1911. One male, one female.

These specimens are perfectly typical of the species which has been recorded from the Philippines, Borneo and Java.

Subfamily Clitumninae.

Clitumnus ablutus Brunner.

Samarang. July, 1909. Two males, two adult males, one immature female.

This species was described from Ceylon [1]) but the present material fully agrees with the original description based on the male sex, except for some color features noted below. Superficially that sex bears a considerable resemblance to *Cuniculina nematodes* (Haan), a Javanese species, but from the latter *ablutus* may be distinguished by the elongate and unarmed head, shorter antennae and the much smaller general size. One of the present males agrees almost exactly with the original measurements of the species, while the other is very slightly larger.

The general color of the males is hazel brown washed with sea-green on the sides of the meso-and metathorax, while the femora vary from vinaceous-rufous to vinaceous-cinnamon, the tibiæ very pale oil-greenish, the median and caudal pair obsoletely banded with brownish, the antennæ clay-color, darker distad.

In Brunner's key to the species of *Clitumnus* the female runs to *C. siamensis*, which is a species almost twice the size of *ablutus*. The nearest ally to the present species of which both sexes are known is *serrulatus* Brunner, a Malayan species found in Java and included in the present collection, the male of which is smaller, less slender, with subobliterate granules on the pronotum and base of the mesonotum, while the female has the cephalic femora serrulate dorsad and ventrad and the general proportions different.

The two adult females before us measure as follows:

	June, 1910.	August, 1909.
Length of body,	66. mm.	66.5 mm.
Length of mesonotum,	15.7 „	15.2 „
Length of metanotum (with median segment),	10.2 „	10.5 „

1) Die Inseckt. Fam. Phasm., p. 191.

	June, 1910,	August, 1909.
Length of median segment,	2. mm.	2. mm.
Length of cephalic femur,	24. „	23.5 „
Length of median femur,	17.8 „	17.5 „
Length of caudal femur,	21. „	20.8 „

The general color of the females varies from vandyke brown to wood brown, with traces of imperfect annulations on the femora.

Clitumnus serrulatus Brunner.

Nongkodjadjar. January, 1911. Four males (in alcohol).

This species, which is compared above with the preceding one, has been recorded from Java, Penang and Borneo.

Cuniculina verecunda Brunner.

Nongkodjadjar. January, 1911. One female (in alcohol).

When compared with the description of the species this specimen agrees in proportions and structure, but shows some differences in spination. The cephalic femora bear 5—7 serrulations dorsad and 0—3 ventrad, the median femora have the dorsal margin with 0—4 serrulations and 1—3 on the ventral margins, aside from the median dentation, while the caudal femora have dorsad 1 (cephalad)—4 (caudad) serrulations and ventrad a single proximal one on the cephalic margin. The cephalic lobes are not symmetrical and when taken in conjuction with the variability in number of the femoral serrulations prove that the form is not stable in these characters, Brunner [1]) having already commented upon the variability in form of the head appendages, which are sometimes spiniform.

The original describer noted the resemblance of this species to *Clitumnus serrulatus* and suggested that it might be but a variety of the latter quite variable form. The fact that the two were taken at the same locality, and as Mr. Jacobson's notes inform us on the same plants, together with the absence of any important differential cha-

1) Die Insekt. Fam. Phasm., p. 203.

racters to separate the two, aside from the variable cephalic lobes and femoral serrulations, leads us to consider this view very probable.

Subfamily Phibalisominæ.

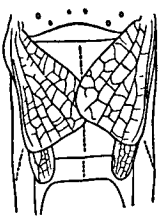
Ernodes jacobsoni n. sp.

Type: ♀; Nongkodjadjar, Java. January, 1911. (E. Jacobson.) [Acad. Nat. Sci. Phila., no. 5209].

Allied to *E. antennatus* Redtenbacher from Singalang, Sumatra and *E. telesphorus* Westwood from West Australia, but differing from *antennatus* in the larger triangular tegmina, in the acute non-excised operculum, in the broader cerci and in the different proportions of the femora, while from *telesphorus* it is separated by its smaller size, more thickly granulate mesonotum, shorter, trigonal tegmina, more rudimentary wings, unspined lateral margins of the femora and more elongate subgenital operculum.

Size medium; form elongate; surface of head, thoracic segments and abdomen more or less regularly granulate. Head subcylindrical, slightly depressed, not exceeding the pronotum in width; occiput with a distinct medio-longitudinal impressed sulcus which severs the occipital margin; eyes ovate in form, not prominent; antennæ filiform, nearly twice the length of the cephalic femora. Pronotum subequal to the head in length and width; cephalic margin angulato-emarginate with a slight rounded median projection, caudal margin subtruncate; cruciform impression decided, the transverse sulcus slightly before the middle; granulations of the disk on the caudal two-thirds crudely arranged in four longitudinal lines. Mesonotum slightly less than four times the length of the pronotum, subequal in width for the greater part of its length, slightly expanding in caudal section; a very fine medio-longitudinal carination present on the entire length of the mesonotum, the granulations of both the mesonotum and mesosternum very numerous and of two grades, the larger ones being arranged more or less regularly in longitudinal lines. Metanotum (including the median segment) very slightly less than

half the length of the mesonotum, the width subequal to that of the broadest portion of the mesonotum; median segment slightly longer than the remaining portion of the metanotum very sparsely tuberculate. Tegmina reaching but a short distance caudad of the middle of the metanotum, trigonal in form, the greatest width (distal) equal to about two-thirds of the tegminal length, distal margin subtruncate, the angles broadly rounded, tubercle not distinctly indicated. Wings narrow, elongate, reaching slightly caudad of the caudal margin of the metanotum, the apex very broadly rounded. Abdomen nearly three-fifths the length of the entire body, tapering, very faintly carinate dorsad, sparsely granulate, the same more or less linear in disposition; anal segment hardly longer than the ninth dorsal abdominal segment, sud-quadrate in general form when seen from dorsum, the caudal margin arcuato-emarginate; cerci very slightly surpassing the lateral angles of the anal segment, depressed, broad, sub-lanceolate, the tips blunt; supra-anal plate very short, subtrigonal; subgenital operculum reaching to the caudal margin of the anal segment, compressed, boat-shaped, with a prominent medio-longitudinal keel, apical margin acute-angulate, the immediate angle sub-spiniform. Cephalic femora very slightly longer than the mesonotum, compressed, with the proximal flexure pronounced, the dorsal margin sub-lamellate distad of the flexure, all of the margins unspined; cephalic tibiae very slightly shorter than the femora. Median femora about two-thirds of the length of the mesonotum, margins unarmed aside from the blunt dentiform tubercle at the distal extremity of the ventro-median carina; tibiæ nearly subequal to the femora in length. Caudal femora reaching to the middle of the third abdominal segment, aside from the more slender form similar in structure and armament to the median femora; tibiæ subequal to the femora in length; metatarsus of the caudal limbs two-thirds of the entire tarsal length.



Ernodes jacobsoni n. sp. Dorsal view of tegmina and wings of type (× 4).

General color (from specimen dried from alcohol) clove brown, the tubercles broccoli brown; eyes wood brown crossed by a longitudinal line of bistre; limbs blotched and incompletely annulate with bistre on a dirty russet ground. Tegmina and wings marked along the humeral trunk with tawny-olive.

MEASUREMENTS.

Length of body,	84.5 mm.
Length of pronotum,	4.5 „
Length of mesonotum,	18.5 „
Length of metanotum (including median segment),	8.6 „
Length of median segment,	5. „
Length of cephalic femur,	19.6 „
Length of median femur,	12.5 „
Length of caudal femur,	17.8 „
Length of tegmen,	3.4 „

In addition to the types we have examined two paratypic males (in alcohol). We take great pleasure in dedicating this species to Mr. Edward Jacobson of The Hague, Holland, who collected the type and who kindly placed the collection in my hands for study.

The type is in the collection of the Academy of Nat. Sciences of Philadelphia; the para-types are in the Leyden Museum.

Subfamily Necrosinae.

Sipyloidea dolorosa Redtenbacher.

Nusa Kambangan. March, 1911. One male.

This specimen fully agrees with the description of the species, originally recorded from East Java and the Key Islands, except for the caudal femora being 17 instead of 14 millimeters long and the anal segment subarcuato-emarginate, instead of triangularly emarginate as originally described.

December, 1912.